

CLAIMS

What is claimed is:

1. A transfer belt for use in an image forming apparatus that senses an initial printing position, comprising:

a PC alloy portion including a position sensing hole extending therethrough and disposed proximate to an edge of the PC alloy portion, the hole usable to determine an initial printing position;

protective tape attached to upper sides and lower sides of both edges of the PC alloy portion; and

an error prevention section insertable into the position sensing hole and having a thickness substantially equivalent to the PC alloy located around the position sensing hole.

2. The transfer belt of claim 1, wherein the error prevention section comprises a transparent sheet.

3. The transfer belt of claim 1, wherein the error prevention section comprises a transparent portion and an opaque portion having a pattern corresponding to a position sensing signal transmitted therethrough.

4. The transfer belt of claim 1, wherein the error prevention comprises a pattern including a combination of at least one opaque portion through which a sensing signal is at least partially blocked and at least one transparent portion.

5. The transfer belt of claim 1, wherein two transparent portions are adjacent to the at least one opaque portion.

6. The transfer belt of claim 1, wherein two opaque portions are adjacent to the at least one transparent portion.

7. The transfer belt of claim 4, wherein the combination is sensed by a position sensor which outputs a signal in response thereto.

8. The transfer belt of claim 1, wherein the protective tape is transparent.
9. The transfer belt of claim 1, wherein the protective tape is stably attached to the error prevention section as a result of the thickness of the error prevention section and the thickness of the PC alloy portion.
10. The transfer belt of claim 1, wherein the error prevention section is sensed and the apparatus uses the sensed result to determine the position of the transfer belt which is used to determine when an electrostatic latent image should be formed on a photosensitive medium to be sequentially transported to the transfer belt.
11. The transfer belt of claim 1, wherein the PC alloy portion is a loop.
12. An image forming apparatus comprising:
 - a photosensitive drum onto which a latent image is formable;
 - a developer unit which forms a visible image on the photosensitive drum by sequentially applying developer of different colors to the latent image;
 - a hole position sensor which senses when a hole in a transfer belt passes therethrough; and
 - a transfer unit which sequentially receives each color of the latent image from the photosensitive drum and transfers the visible image from the photosensitive drum to a paper, the transfer unit including the transfer belt comprising a PC alloy portion having a throughhole proximate to an edge which is sensible by the hole position sensor, protective tape attached to upper and lower sides of both edges of the PC alloy, and an error protection section insertable into the throughhole and having a thickness substantially equal to the PC alloy proximate to the throughhole.
13. An image transfer belt for use in an image forming apparatus including an initial printing position determining unit, the image transfer belt comprising:
 - a loop of PC alloy having a throughhole near an edge;

protective tape covering both upper and lower sides of both edges of the PC alloy loop; and

an error protection section insertable into the throughhole and substantially the same thickness as the loop of PC alloy, the error protection section sensible by a hole position sensor which outputs a signal usable to determine an initial printing position, and preventing the protection tape from sticking together.

14. A method of determining an initial printing position of an image transfer belt in an image forming apparatus so as to determine when an electrostatic latent image should be formed on a photosensitive drum so as to synchronize the latent image with the image transfer belt to prevent color imbalance between sequentially transferred colors of the latent image transferred from the photosensitive drum to the image transfer belt, comprising:

driving at least a portion of the image transfer belt having an error prevention section through a position sensor;

sensing the error prevention section via the position sensor; and

outputting a signal indicating that the error prevention section is present in the sensor,

wherein the signal indicates the position of the image transfer belt and is used as at least a criterion to determine when the latent image should be formed on the photosensitive drum.

15. A transfer belt comprising:

a PC alloy portion having a position sensing throughhole disposed near an edge of the PC alloy portion;

protective tape attached to upper and lower sides of first and second edges of the PC alloy portion; and

an error prevention section disposed in the position sensing throughhole and having a thickness substantially equivalent to that of the PC alloy portion surrounding the error prevention section.

16. An error prevention section of a transfer belt, the error prevention section comprising:

a transparent portion through which a sensing signal is at least substantially unblocked; and

an opaque portion through which the sensing signal is at least partially blocked, wherein the transparent and opaque portions are arranged in a pattern which yields a signal when a position signal is passed through the error prevention section.